DUMME65.002APC

AU 03/01431
08 APRIL 2004

41

CLAIMS

1. An electric deep frying appliance adapted for the heating of cooking oil comprising a bowl and heating assembly; said heating assembly including a heat distributor wherein said heat distributor is in the form of an annular dished member; said heating assembly further including a control pylon adapted to provide power and temperature control to said heat distributor.

2. The appliance of claim 1 wherein said bowl is formed of a substantially vertical wall part and a dished base part.

3. The appliance of claim 1 or 2 wherein said bowl is formed of mild steel.

4. The appliance of claim 1 or 2 wherein said bowl is formed of stainless steel.

5. The appliance of claim 1 or 2 wherein said bowl is formed of aluminium.

6. The appliance of any one of claims 1 to 5 wherein said bowl is supported in a suitable support structure.

7. The appliance of any one of claims 1 to 5 wherein said dished base part is provided with a central depression, said central depression adapted to the accumulation of oil contaminants.

18 42

8. The appliance of claim 7 wherein said annular dished member extends substantially between the perimeter of said central depression and the internal surface of said wall part.

9. The appliance of claim 7 or 8 wherein said annular dished member is formed of pressure die-cast aluminium.

10. The appliance of any one of claims 7 to 9 wherein said annular dished member envelops a heat emitting tubular element.

11. The appliance of any one of claims 7 to 9 wherein said annular dished member is thermally connected to a heat emitting tubular element.

12. The appliance of any one of claims 7 to 11 wherein said annular dished member is provided with integrally cast support members projecting from the underside of said dished member so as to raise said dished member above the surface of said dished base part of said bowl.

13. The appliance of claim 10 or 11 wherein said heat emitting tubular element is in the form of a length of steel tube having an insulated heating coil spring along the axis of said tube; said coil spring

AU03/01431
8 APR 04

19 43

connected to terminals at the outer ends of said length of steel tube.

14. The appliance of any one of claims 1 to 13 wherein said annular dished member is provided with an integrally die-cast raised pylon connector spigot.

15. The appliance of claim 14 wherein said terminals of said coil spring project upwardly in said connector spigot.

16. The appliance of any one of claims 1 to 15 wherein said control pylon comprises a substantially vertical hollow tubular member sealably connected to said connector spigot at the lower end of said tubular member and to a control module at the upper end of said tubular member; said control pylon providing a conduit for power cables and a control rod extending from said control module to a thermostat and power connection module mounted within said lower end of said tubular member.

17. The appliance of claim 16 wherein said tubular member is of a length sufficient to position said control module above the rim of said bowl when said annular dished member of said heat distributor is resting with said support members on said dished base part of said bowl.

AMENDED SHEET (ARTICLE 19)

AU03/01431
08 APR 04

~~20~~ 44

18. The appliance of any one of claims 16 or 17 wherein said thermostat and power connection module is adapted to mount to said connector spigot within said tubular member.

19. The appliance any one of claims 16 to 18 wherein said thermostat and power connection module includes an adjustable thermostat mechanism, said mechanism provided with a vertically projecting thermostat adjustment shaft.

20. The appliance of any one of claims 16 to 19 wherein said thermostat and power connection module includes connector means adapted to provide electrical connection with said terminals of said heating coil spring when said thermostat and power connection module is located on said connector spigot.

21. The appliance of any one of claims 16 to 20 wherein said control module is provided with a safety switch projecting from said module such that said switch is in a first "power enabled" position when said heating assembly is properly installed in said bowl.

22. The appliance of claim 21 wherein said safety switch is in a second "power disabled" position when said heating assembly is removed from said bowl.

AMENDED SHEET (ARTICLE 19)

AU03/01431
08 APR 04

~~21~~ 45

23. The appliance of any one of claims 16 to 22 wherein power cables are connected between said connector means and said safety switch.

24. The appliance of claim 23 wherein said control module is provided with a main power switch adapted to provide mains power to said safety switch.

25. The appliance of any one of claims 19 to 24 wherein said control module is provided with a thermostat control knob, said control knob connected to said thermostat adjustment shaft by said control rod.

26. The appliance of claim 25 wherein said thermostat control knob and said adjustment shaft are adapted to the setting of said thermostat to transfer power to said heating element up to a desired temperature of cooking oil within a predetermined range of temperatures.

27. The appliance of claim 25 or 26 wherein said thermostat control knob and said adjustment shaft are adapted to the re-setting of said thermostat.

28. The appliance of any one of claims 16 to 27 wherein said control module is provided with a power socket adapted to receive a power input plug.

29. The appliance of any one of claims 10 to 28 wherein the electrical characteristics of said heat emitting

AMENDED SHEET (ARTICLE 19)

tubular element and the surface area of said annular dished member are adapted to have a maximum heat flux density of less than 5 watts per centimeter squared.

30. The appliance of any one of claims 1 to 29 wherein said heating assembly is removable from said bowl.

31. The appliance of any one of claims 2 to 30 wherein a sludge strain basket is provided; said basket adapted to restrict turbulent flow of oil proximate to said dished part of said bowl; said basket adapted to capture particulate carbon.

32. An electric deep frying appliance adapted for the heating of cooking oil comprising a bowl and heating assembly; said heating assembly including a heat distributor wherein said heat distributor is in the form of a tubular heating element; said heating assembly further including a control pylon adapted to provide power and temperature control to said heat distributor.

33. The appliance of claim 32 wherein said bowl is formed of a substantially vertical wall part and a dished base part.

34. The appliance of claim 32 or 33 wherein said bowl is formed of mild steel.

AU03/01481
08 APR 04

~~23~~ 47

35. The appliance of claim 32 or 33 wherein said bowl is formed of stainless steel.

36. The appliance of claim 32 or 33 wherein said bowl is formed of aluminium.

37. The appliance of any one of claims 32 to 36 wherein said bowl is supported in a suitable support structure.

38. The appliance of any one of claims 32 to 37 wherein said heat distributor is in the form of a tubular heating element; said tubular heating element arranged in a symmetrical pattern projecting generally in a horizontal plane from a lower end of said control pylon; said pattern adapted to an even distribution of heat emanating from said tubular heating element.

39. The appliance of any one of claims 32 to 38 wherein said tubular heating element is comprised of a length of steel tube having an insulated heating coil spring along the axis of said tube; said coil spring connected to terminals at the outer ends of said steel tube.

40. The appliance of any one of claims 32 to 98 wherein said control pylon comprises a substantially vertical hollow tubular member sealably connected at said lower end of said tubular member to said tubular heating

element and to a control module at the upper end of said tubular member; said control pylon providing a conduit for power cables and a control rod extending from said control module to a thermostat and power connection module mounted within said lower end of said tubular member.

41. The appliance of any one of claims 32 to 40 wherein said control pylon is provided with an end cap sealably connected to the lower end of said tubular member; said end cap providing support for said tubular heating element.

42. The appliance of claim 41 wherein said thermostat and power connection module is adapted to mount within said end cap.

43. The appliance of claim 42 wherein said thermostat and power connection module includes an adjustable thermostat mechanism, said mechanism provided with a vertically projecting adjustment shaft.

44. The appliance of claim 42 or 43 wherein said thermostat and power connection module includes connector means adapted to provide electrical connection with said terminals of said heating coil spring when said thermostat and power connection module is located on said end cap.

AU03/01431
08 APR 04

~~35~~ 49

45. The appliance of any one of claims 40 to 44 wherein said control module is provided with a safety switch adapted to prevent transmission of power to said heating coil spring when said heating assembly is improperly installed in said bowl.

46. The appliance of claim 45 wherein said safety switch is adapted to prevent transmission of power to said heating coil spring when said heating assembly is not properly installed in said bowl.

47. The appliance of any one of claims 32 to 46 wherein a first thermostat and a second thermostat are in thermal communication with said end cap.

48. The appliance of any one of claims 41 to 47 wherein said end cap is in thermal communication by bridging means with a portion of said tubular heating element; said portion being thermally remote from said end cap.

49. The appliance of claim 47 or 48 wherein said first thermostat is adapted to cut power to said heating element at a predetermined temperature; said temperature being a desired temperature of said cooking oil.

50. The appliance of any one of claims 47 to 49 wherein said second thermostat is adapted to cut power to said

AU02/01431
08 APR04

heating element at a temperature significantly higher than any desired temperature of said cooking oil.

51. An electric deep frying apparatus adapted for the heating of cooking oil comprising a bowl and a heat source; said heat source supplied by power cables conducted through a sealed hollow tubular control pylon extending between said heat source and the rim of the bowl.

52. The deep frying apparatus of claim 51 wherein said heat source comprises a heating element in heat conducting communication with a heat distributor.

53. The deep frying apparatus of claim 52 wherein said heat distributor is in the form of a dish having a central aperture.

54. The deep frying apparatus of any one of claims 51 to 52 wherein said control pylon defines an oil-free volume.

55. The deep frying apparatus of any one of claims 51 to 54 wherein a temperature control device is located at the base of said control pylon.

56. The deep frying apparatus of claim 55 wherein said temperature control device includes a bi-metallic strip; at least a portion of said strip being in thermal communication with said heat distributor.

AMENDED SHEET (ARTICLE 19)

AU03/01431
08 APR 04

27 51

57. The deep frying apparatus of claim 55 or 56 wherein said temperature control device is adjustable; an adjustment shaft passing from said temperature control device through said control pylon to a control module.

58. The deep frying apparatus of any one of claims 52 to 57 wherein a sludge strain basket is provided; said basket adapted to restrict turbulent flow of oil blow said central aperture of said heat distributor; said basket adapted to capture particulate carbon.

59. An electric deep frying apparatus adapted for the heating of cooking oil comprising a bowl and a heat source; said heat source supplied by power conductor cables passing through a sealed vertical control pylon extending between said heat source and the rim of the bowl.

60. The deep frying apparatus of claim 59 wherein said heat source is in the form of a heating coil, said coil suspended spaced away from the base of said bowl by said control pylon.

61. The deep frying apparatus of claim 60 wherein said heating coil is provided with terminals issuing from an end cap sealably connected to the base of said pylon.

AU03/01431
08 APR 04

~~28~~ 52

62. The deep frying apparatus of claim 61 wherein said end cap is provided with a heat conducting bridge in thermal communication with a portion of said heating coil.

63. The deep frying apparatus of claim 62 wherein dual self resetting thermostat units are mounted in the base of said control pylon; said thermostat units in thermal communication with said end cap and said heat conducting bridge.

64. The deep frying apparatus of claim 63 wherein a first of said thermostat units is adapted to prevent the supply of electrical power to said heating coil above a predetermined temperature of the cooking oil as thermally communicated to said casting; said predetermined temperature being associated with an optimum temperature for deep frying.

65. The deep frying apparatus of claim 63 or 64 wherein a second of said thermostat units is adapted to act as a safety power cut-off means, acting to prevent supply of electrical power to said heating coil at a temperature significantly higher than said predetermined temperature as thermally communicated through said heat conducting bridge.

AMENDED SHEET (ARTICLE 19)

AU03/01431
08 APR 04

29 53

66. A method for the heating of cooking oil in a bowl by means of a heat distributor wherein the maximum heat flux density of said heat distributor is not greater than 5 watts per centimeter squared; said method including the steps of:

a. Providing a heat distributor in the form of a die cast dish having a central aperture,

b. positioning said heat distributor in a bowl having a dished base and central depression,

c. supporting said heat source clear of said dished base.

67. The method of claim 66 wherein said die cast dish envelops a tubular heating element in heat conducting communication with said heat distributor.

68. The method of claim 66 or 67 wherein said die cast dish extends substantially between the internal confines of said bowl and the periphery of said central depression.

69. The method of claim 67 wherein said tubular heating element is supplied with electrical power via a control pylon sealably attached to a portion of said die cast dish.

70. The method of claim 69 wherein said control pylon extends vertically to at least the rim of said bowl;

AU03/01431
08 APR 04

~~30~~ 54

the upper end of said pylon sealably attached to a power control module.

71. The method of claim 69 or 70 wherein a temperature control module in the form of a thermostat is positioned at the base of said control pylon and in thermal communication with said die cast dish.

72. The method of claim 71 wherein said temperature control module is adjustable by means of a control rod extending up through said control pylon from said temperature control module to a control knob mounted to said power control module.

73. The method of any one of claims 66 to 72 wherein the surface area of said die cast dish and the electrical characteristics of said tubular heating element are adapted to emit no greater than said maximum heat flux density of 5 watts per centimeter squared.

AMENDED SHEET (ARTICLE 19)